## 1 PRODUCT AND COMPANY IDENTIFICATION

### Manufacturer

Aqua Science, Inc.
1601 Woodland Avenue
Columbus, Ohio 43219

**Emergency:** CHEMTREC: 1-800-424-9300
**Phone:** 614-252-5000
**Fax:** 614-257-0008
**Email:** AquaInfo@aquascience.com
**Web:** aquascience.com

**Product Name:** Sulfuric Acid 66 Degree Baume
**Revision Date:** 9/2/2015
**Version:** 1
**SDS Number:** Sulfuric Acid 66 Degree Baume

## 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):**

Health, Serious Eye Damage/Eye Irritation, 1
Health, Skin corrosion/irritation, 1 A
Environmental, Hazards to the aquatic environment - Chronic, 3
Health, Acute toxicity, 5 Oral
Environmental, Hazards to the aquatic environment - Acute, 3

### GHS Label elements, including precautionary statements

**GHS Signal Word:** DANGER

**GHS Hazard Pictograms:**

**GHS Hazard Statements:**

H318 - Causes serious eye damage
H314 - Causes severe skin burns and eye damage
H412 - Harmful to aquatic life with long lasting effects
H303 - May be harmful if swallowed
H402 - Harmful to aquatic life

**GHS Precautionary Statements:**

P202 - Do not handle until all safety precautions have been read and understood.
P233 - Keep container tightly closed.
P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
P262 - Do not get in eyes, on skin, or on clothing.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P310 - Immediately call a POISON CENTER or doctor/physician.
P404 - Store in a closed container.
P406 - Store in a corrosive resistant container with a resistant inner liner.
P501 - Dispose of contents/container to the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

### Hazards not otherwise classified (HNOC) or not covered by GHS

General Advice:
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**Route of Entry:** Eyes; Ingestion; Inhalation and Skin.

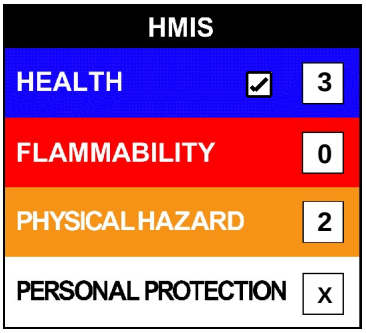
**Target Organs:** Skin; Eyes; Gum Tissue; Esophagus; Stomach; Gastrointestinal tract; Mucous membranes; Throat; Respiratory Tract; Digestive tract; Heart function.

**Inhalation:** Corrosive and highly toxic. May be harmful or fatal if inhaled. May cause severe irritation and burns of the nose, throat and respiratory tract.

**Skin Contact:** Causes serious/severe skin damage.

**Eye Contact:** Causes severe/serious eye damage.

**HMIS III:** Health = 3(Chronic), Fire = 0, Physical Hazard = 2
**HMIS PPE:** X - Consult your supervisor for special instructions




## 3 COMPOSITION/INFORMATION ON INGREDIENTS

**Ingredients:**

| Cas# | % | Chemical Name |
|---|---|---|
| 7664-93-9 | >95% | Sulfuric acid |

The exact percentage by weight of the ingredients in this formula is proprietary.

## 4 FIRST AID MEASURES

**Inhalation:** If symptoms develop as a result of inhalation, immediately move affected person away from exposure and into fresh air. Seek medical attention immediately. Keep person warm and quiet. If affected person is not breathing - begin artificial respiration. If person finds breathing difficult - administer oxygen.

**Skin Contact:** In case of contact, flush affected area with copious amounts of water for at least 15 minutes. Remove contaiminated clothing and shoes. Seek medical attention. Launder clothing before reuse.

**Eye Contact:** In case of contact, flush eyes with copious amounts of water for at least 15 minutes while holding eyelids apart. Remove any contaiminated clothing. Seek medical attention. Launder clothing before reuse.

**Ingestion:** If this product is swallowed, seek medical attention immediately. DO NOT induce vomiting as doing so will cause further damage to mouth and throat. If affected person is conscious and alert, immediately wash mouth with water and give water or milk to drink. If possible, do not leave affected person unattended.

## 5 FIRE FIGHTING MEASURES

**Flash Point:** None
**Burning Rate:** Not Applicable
**LEL:** N/A
**UEL:** N/A

In case of fire, use carbon dioxide or dry chemical to extinguish small fires. Use foam or water spray to extinguish large fires. Full protective equipment (bunker gear ) and self-contained breathing apparatus (SCBA) should be used for all in door fires and any significant outdoor fires. If possible, firefighters should control run-off water to prevent environmental contamination.

This product reacts with most metals to release hydrogen gas, which may form explosive mixtures with air.

## 6 ACCIDENTAL RELEASE MEASURES

In the event of a small spill, absorb spilled product into inert material and scoop into a container for proper disposal. Avoid run-off into storm sewers and ditches. Large spills need to be contained - do not discharge into drains; if applcable - report in accordance with applicable regulations; and pick up for proper disposal. Ventilate area. Avoid contact with eyes. Watch out for slippery conditions when spillage.

## 7 HANDLING AND STORAGE

**Handling Precautions:** ALWAYS ADD ACID, SLOWLY AND IN SMALL QUANTITIES, TO A MUCH LARGER VOLUME OF WATER.

Avoid breathing vapors or mist. Avoid contact with eyes, skin, or clothing. Handle with care and avoid spillage on the floor ( slippage). Keep material out of reach of children. Launder contaminated clothing. Wash clothing before reuse and decontaminate or discard contaminated shoes. Wash thoroughly after handling.

**Storage Requirements:** Store in cool/dry area and ensure there is adequate ventilation. Keep container sealed tightly when not in use. Do not allow product to freeze.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls:** All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Use mechanical (general) ventilation for storage areas.
Safety shower and eye bath.

**Personal Protective Equipment:** HMIS PP, X | Consult your supervisor for special instructions
HMIS PP, W | Dust and Vapor Respirator
Sulfuric acid (7664-93-9) [>95%]

Personal protective equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full contact Material: Fluorinated rubber Minimum layer thickness: 0.7 mm Break through time: 480 min Material tested:Vitoject (KCL 890 / Aldrich Z677698, Size M) Splash contact Material: Nitrile rubber Minimum layer thickness: 0.2 mm Break through time: 30 min Material tested:Dermatril P (KCL 743 / Aldrich Z677388, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer

familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection: Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection: Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Sulfuric acid (7664-93-9) [>95%]

Components with workplace control parameters

| | | |
|---|---|---|
| TWA | 0.2 mg/m3 | USA. ACGIH Threshold Limit Values (TLV) |
| TWA | 1 mg/m3 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| TWA | 1 mg/m3 | USA. Occupational Exposure Limits (OSHA) - Table Z- 1 Limits for Air Contaminants |

## 9 PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|---|---|---|
| **Appearance:** | Colorless to dark-brown. | | |
| **Physical State:** | Liquid | **Odor:** | Pungent |
| **Spec Grav./Density:** | 1.67 - 1.84 (strengh dependent). | **Solubility:** | Completely soluble in water. |
| **Boiling Point:** | > 212 Degrees F | **Freezing/Melting Pt.:** | < 0 Degrees F |
| **Flammability:** | N/A | **Flash Point:** | None |
| **Vapor Pressure:** | No data | **Vapor Density:** | No data |
| **pH:** | 1.0 - 2.0 (strength dependent) | **UFL/LFL:** | None/None |
| **Evap. Rate:** | <1 (n-Butyl Acetate=1) | | |

## 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity:** | Reacts vigorously, violently or explosively with many organic and inorganic chemicals and with water. |
| **Chemical Stability:** | Product is stable under normal conditions. Avoid contact between this product and materials which support combustion (oxidizers) and corrosive materials (strong acids and bases). |
| **Conditions to Avoid:** | Oxidation promoting conditions ( Heat and Sunlight). |
| **Materials to Avoid:** | Bases, Halides, Organic materials, Carbides, fulminates, Nitrates, picrates, Cyanides, Chlorates, alkali halides, Zinc salts, permanganates, e.g. potassium permanganate, Hydrogen peroxide, Azides, Perchlorates., Nitromethane. phosphorous, Reacts violently with:, cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorous(III) oxide, Powdered metals |
| **Hazardous Decomposition:** | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| **Hazardous Polymerization:** | Will not occur. |

## 11 TOXICOLOGICAL INFORMATION

Sulfuric acid (7664-93-9) [>95%]

Information on toxicological effects

Acute toxicity:
Oral LD50 LD50 Oral - rat - 2,140 mg/kg
Inhalation LC50 LC50 Inhalation - rat - 2 h - 510 mg/m3
Dermal LD50 no data available
Other information on acute toxicity

Skin corrosion/irritation: Skin - rabbit - Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation: Eyes - rabbit - Severe eye irritation

Respiratory or skin sensitisation: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:
The International Agency for Research on Cancer (IARC) has determined that occupational exposure to strong-inorganic- acid mists containing sulfuric acid is carcinogenic to humans (group 1).
IARC: 1 - Group 1: Carcinogenic to humans (Sulfuric acid)
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: Known to be human carcinogen (Sulfuric acid)
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: Specific target organ toxicity - single exposure (Globally Harmonized System):

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Causes respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. Causes skin burns. Causes skin irritation. Eyes Causes eye burns. Causes severe eye burns. Causes eye irritation.

Signs and Symptoms of Exposure: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Pulmonary edema. Effects may be delayed., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects: no data available

Additional Information:

RTECS: WS5600000

## 12 ECOLOGICAL INFORMATION

Sulfuric acid (7664-93-9) [>95%]

Information on ecological effects

Toxicity:

Toxicity to fish LC50 - Gambusia affinis (Mosquito fish) - 42 mg/l - 96 h.

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life with long lasting effects.

## 13 DISPOSAL CONSIDERATIONS

Disposal methods:
The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Sulfuric acid (7664-93-9) [>95%]

Waste treatment methods

Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging: Dispose of as unused product.

## 14 TRANSPORT INFORMATION

UN1830, Sulfuric acid with more than 51 percent acid, 8, PGII

## 15 REGULATORY INFORMATION

Component (CAS#) [%] - CODES
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RQ(1000LBS), Sulfuric acid (7664-93-9) [>95%] CERCLA, CSWHS, EHS302, EPCRAWPC, MASS, NJHS, OSHAWAC, PA, SARA313, TSCA, TXAIR

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Regulatory CODE Descriptions
-----------------------------------------------------------------
RQ = Reportable Quantity
CERCLA = Superfund clean up substance
CSWHS = Clean Water Act Hazardous substances
EHS302 = Extremely Hazardous Substance
EPCRAWPC = EPCRA Water Priority Chemicals
MASS = MA Massachusetts Hazardous Substances List
NJHS = NJ Right-to-Know Hazardous Substances
OSHAWAC = OSHA Workplace Air Contaminants
PA = PA Right-To-Know List of Hazardous Substances
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SARA313 = SARA 313 Title III Toxic Chemicals
TSCA = Toxic Substances Control Act
TXAIR = TX Air Contaminants with Health Effects Screening Level

## 16 OTHER INFORMATION

Notice to Reader:
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier nor any of its subsidiaries, assumes any laibility whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibilty of the user. All materials present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Aqua Science, Inc. warrants that this product conforms to its chemical description and is reasonably fit for the purpose referred to in the directions for use when used in accordance with the directions under normal conditions. Buyer assumes the risk of any use outside of such directions.

Seller makes no other warranty or representation of any kind, express or implied, concerning the product, including NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITTNESS OF THE GOODS FOR ANY OTHER PARTICULAR PURPOSE. No such warranties shall be implied by law and no agent of the seller is authorized to alter this warranty in any way except in writing with a specific reference to this warranty.
The exclusive remedy against seller shall be in a claim for damages not to exceed the purchase price of the product, without regard to whether such a claim is based upon a breach of warranty or tort.

Any controversy or claim arising out or relating to this contract, or breach thereof, shall be settled by arbitration in accordance with the commercial arbitration rules of the American Arbitration Association, and judgement upon rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.